

Virginia Wildlife

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Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources

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Cover

Redpoll by Karl Maslowski, Cincinnati, Ohio. You may be fortunate enough to see one of these perched on a snow-laden branch if you take Carolyn Reeder's advice to see the woods in winter (page 8). Or, if you live near the shore, you might come across an icy scene like the one in our back cover photo by Gary Gaston of Lake Charles, Louisiana.

Letters

Non-Game Update

I was overjoyed to read the editorial "To Help a Neighbor" by Jack Randolph and "Wildlife Gets a Tax Break" by Joe Coggin (October 1981). It is about time that the Commonwealth made provisions for those taxpayers who would not otherwise have the opportunity to contribute to wildlife conservation [such as] those who do not buy hunting and fishing licenses or big game stamps because they do not hunt or fish.

The following is information from the Pennsylvania Game News (April 1981): "Colorado's state income tax check-off system . . . is growing in popularity both inside and outside the state. In 1978, Colorado's taxpayers contributed \$350,000; in 1979, \$500,000; and in 1980, \$650,000. This same type of program has been initiated in Oregon, where in 1979 it generated \$337,000, and is scheduled to begin in Kansas, Kentucky, Minnesota and Utah." I am sure that other readers of Virginia Wildlife are interested in these figures . . . this plan does, and will work.

According to figures released by the state of Washington, "The Washington Department of Game received \$418,000 in 1980 for their non-game program from the sale of vanity license plates, which is used to study and manage the state's 500 non-game species." According to the Nebraska Game and Parks Commission and the Omaha World Herald, \$20,000 were raised for wildlife during the first annual "Recycle for Wildlife" campaign. Organizations collected recyclable materials, then donated the proceeds to the state's habitat acquisition program.

During a time of high inflation and massive cuts in federal funds, we should use all means at our disposal to develop new and existing programs. To borrow a contemporary phrase, "Wildlife is the Winner."

Steven J. Price
King George

Thanks for the information: let's hope it encourages many Virginians—and others, as you've pointed out—to contribute, whether through their state income tax returns or by direct contribution. The message bears repeat-

ing: you may designate any portion (in whole dollar amounts) or all of your tax return for donation to the Non-Game Program on Line 20 of your Virginia income tax form. If you have no refund coming, or for some other reason would like to send a contribution directly to the program, you may do so by mailing a check to Non-Game Wildlife Program, P.O. Box 11104, Richmond, Virginia 23230. Virginia Wildlife has published articles in the October 1981 and January 1982 issues explaining how this money will be used, and we will continue to keep you posted on how the program is progressing.

Also, when you contribute—by either method—you will get a receipt which you may use to claim the contribution as a deduction next year.

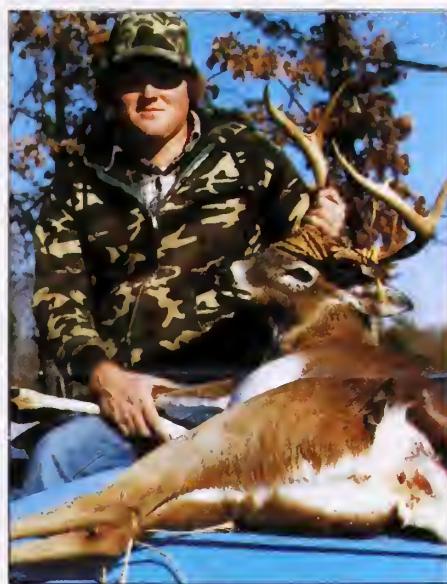
At this writing, we had already begun to receive contributions and we believe we are off to a good start—but it is only a start. We still need your help. If you care about wildlife, we need to hear from you!—Assistant Editor

Corrections

We offer our sincere apologies to Gary Norman of the West Virginia Department of Natural Resources, who co-authored the article "Grouse Cycles—Ups and Downs" with Joe Coggin (December 1981). We inadvertently left Gary's name off the byline.

As soon as the December issue rolled off the presses, we began to receive calls and letters about the "Growing Up Outdoors" column in that issue. The topic was stargazing, and we transposed something: Polaris is at the tip of the tail of the Little Bear, not the Great Bear, as we stated. We're sorry for any problems this might have caused budding astronomers. The veteran stargazers weren't fooled for a minute!

In the January 1982 issue, in the article on the Non-Game Program, "The Tax Check-Off: Your Chance to Help," part of a line was somehow eradicated in the first paragraph. The sentence beginning on line 7 should have read, "This year, you have an opportunity to make the task a bit more pleasant."



Mistaken Identity

I hunted the first week of the deer season with the Knock Down Hunt Club in Charlotte County near Keysville, about 150 miles west of Newport News. Shortly after noon on November 19, Jeff Metcalf, a member of the hunting party, called on his truck radio to report that he had killed an unusual deer—an eight-point doe! No one believed him. [But] he was telling the truth: he had killed a very nice eight-point, 150-pound doe. Fortunately, I had my camera with me and got a couple of shots. Game Warden Jimmie Blanks came out to inspect the doe. After examining her teeth, he estimated her age at four to five years, but he did not think that she had ever had young. He checked the deer in for Jeff, and certified that she was a doe with a 13½-inch spread rack.

I'm enclosing a picture, and hope that you will be able to use it [so that] your readers can tell their grandchildren about this rare occurrence. I definitely intend to tell mine!

Henry Morris
Ft. Monroe

Supervising game biologist Jack Gwynn says antlered does are "indeed rare . . . but from time to time, one does turn up." We're glad Col. Morris had his camera at the ready!—Assistant Editor



Kenneth Lewis, Jr.

The Unpopular 'Possum

This poor, maligned creature has survived despite its lack of intelligence—or perhaps because of it.

by Mary Villarejo

VIRGINIA WILDLIFE

Pity the poor 'possum: nobody loves him. The farmer detests him because of his annoying habit of raiding the hen-house and eating both chickens and eggs. The town-dweller dislikes him because he is a predator who skulks in back yards at night in search of something—almost anything—to eat. The opossum has a voracious appetite and will eat anything edible, even substances which other animals would not consider fit to eat, such as decaying garbage. Besides, he is far from handsome, having a long scaly tail like a rat's, a pointed nose like a weasel's, and bulging eyes. He looks, in fact, like a monster rat.

His fur is a coarse, woolly mixture of black and yellowish white, having the effect of a dirty gray. The meat of the opossum can be eaten, but it is not exactly a delicacy, being rather oily. The fur of the opossum can be worn, but it is not considered of good quality. In short, the opossum is chiefly regarded as a nuisance.

And yet it is an interesting creature in many ways. The only marsupial in America, the opossum has had a very long history, dating back for millions of years. It is, in fact, a so-called "living fossil," having remained the same as its fossil ancestors which lived a hundred million years ago.

Because of its indiscriminate diet and numerous progeny, the opossum's ability to survive is greater than that of many other animals. There is certainly no danger that opossums will appear on the "endangered species" list in the near future; on the contrary, their numbers are increasing. Even though opossums are hunted for their meat and their fur, especially in the south where opossum-hunting is a popular sport, they remain numerous.

The opossum gives birth to about 13 young at a time, and can have two, or even three, litters a year. The babies are tiny, hairless creatures weighing about 1/15 of an ounce, so small that the entire litter could fit into a teaspoon. For two months the young remain in the mother's pouch, and then emerge to ride on her back, their prehensile tails sometimes wrapped around her tail.

The common opossum (Large American Opossum), found in Virginia and throughout the southeastern part of the United States, was formerly believed to be a different species than the opossum found in the Southwest; but it has recently been determined that the Virginia opossum and the Texas opossum are actually the same species. The large American opossum inhabits most of the 50 states except for some in the Northwest, and has even extended its range into Canada. A nocturnal animal, it is not often seen except in the glare of automobile headlights.

When the opossum raids the farm yard—at night, of course—it is usually caught in the morning. It will gorge itself on chickens and will then fall asleep, to be found at daylight, surrounded by dead chickens, by the exasperated farmer.

The opossum has poor eyesight and a poor sense of smell, but its hearing is remarkably acute. It can hear the

slightest rustle of an insect in the grass. Before the opossum goes to sleep, its paper-thin ears roll up into small tubes, which fold over so that all sounds are shut off. Presumably its hearing is so acute that it would otherwise be kept awake.

The most interesting aspect of opossum behavior is the animal's well-known practice of "playing 'possum" when it is threatened, giving every indication of being dead. Formerly this was believed to be a clever trick on the part of the animal to deceive its enemies. It is now believed however, that the opossum undergoes a temporary paralysis which is quite involuntary.

When it is pursued by an enemy, the opossum will make strenuous efforts to escape, scuttling along the ground or climbing a tree if one is nearby. It is a skillful climber, the opposable "thumbs" of its hind feet being well-designed for grasping branches, and its prehensile tail helping it to keep a firm footing. On the ground, the opossum has a clumsy, shuffling gait, but it can move with considerable speed if it has to. When it is cornered, with no possibility of escape, it collapses, going into a coma brought about by shock. It lies on its side, its eyes glazed, its tongue protruding, for all appearances a dead animal.

A predator, seeing what appears to be a dead animal, will lose interest and move on. Thus the opossum's "playing dead" act is an effective defense, even though it is not planned as such. And the opossum needs defense, as it is the target of hawks and owls, as well as other animals larger than itself.

Although it is regarded as a destructive pest by farmers and a marauding nuisance by city-dwellers, the opossum does have some redeeming qualities. While it is true that the opossum has a bad habit of devouring chickens and eggs, it also eats mice and insects. Any animal which helps to keep the mouse and the insect populations within reasonable limits is doing a favor for the world in which it lives.

Opossum meat, although it cannot compete with filet mignon, is edible; and opossum fur, while it is not in the same class with mink, is wearable. The fur of the opossum is considered one of the important furs of the industry. So the opossum can be regarded as a useful animal.

It is an interesting, paradoxical fact that the opossum should have survived for millions of years in spite of its low intelligence. The opossum is considered the least intelligent of American mammals; yet it has survived while many others have become extinct. Can it be that nature protects her mentally retarded creatures? The opossum has a built-in defense mechanism which protects the animal in spite of itself.

There is a lesson in this somewhere, if we can figure out what it is. Perhaps it constitutes an encouragement for human beings, who sometimes behave in ways that are less than intelligent. □

The muskellunge—now there's a fish that stirs the imagination! The possibility of catching a 10- to 40-pound trophy, its great strength, the strategy required to "battle" a reputation, and the aerial acrobatics of a hooked muskellunge provide the ingredients for a great fish story. Fish tales, as a general rule, have a tendency to grow with each telling, but musky stories that sound like "fish tales" may well be the truth (or close to it!). Have you ever noticed an angler switching to heavier test fishing line "just in case" when fishing a lake known to contain them?

The musky is one of the largest of the true freshwater fishes in Virginia. It belongs to the pike family and is a cousin to the northern pike and the more familiar chain pickerel (jackfish). Most chain pickerel caught are 15-18 inches long, while northern pike may reach 35-40 inches in length and weigh 20 pounds. The 'lunge, the largest of the pikes, can attain weights in excess of 50 pounds. The official world record fish was caught in the St. Lawrence River in 1957. The record weighed 60 pounds, 15 ounces and measured 64½ inches in length. A 39-pound, 12-ounce lunker caught from the New River just last November is the current Virginia record muskellunge. The color scheme in the musky is generally a light green with dark vertical bars. Northern pike usually have light, bean-shaped markings on a dark green background. Chain pickerel are olive

green with dark, interconnected markings resembling links of a chain (hence the name). On any fish, the gill covering is composed of two parts, the cheek and the operculum. The cheek is the area immediately behind the eye, and the operculum extends from the cheek to the outer edge of the gill covering. Scales occur only on the top half of the cheek and operculum on muskellunge. The northern pike's cheek is completely scaled and only the top half of the operculum is scaled, and the chain pickerel's cheek and operculum are both fully scaled.

Muskies have not always been in Virginia. They were first stocked in 1963 by the Commission of Game and Inland Fisheries. Even though they were south of their native range, the stocked fish adapted to their new environments, and now reside in select waters throughout the Commonwealth.

The state stocks the species to provide a trophy fishery (usually where no pike species exist), and to provide an additional predator. However, providing these freshwater barracudas is no easy task! They are extremely hard to raise and suffer high mortalities. Two methods are used in Virginia. In one, muskellunge eggs and sperm are collected from domestic brood stock held at Buller Fish Hatchery in Marion. In the other method, adults are trapped with special nets from Lake Shenandoah in Rockingham County and Lake Burke in Fairfax County. Eggs and milt are taken

A Freshwater Trophy

The Musky in Virginia

Ever since the Game Commission began stocking this acrobat in Virginia waters, it has been thrilling those who were fortunate enough to conquer it.

by Ed Steinkoenig



from the adult fish and the fertilized eggs are sent to the Front Royal Hatchery to be hatched. The newly hatched fry are raised in nursery ponds until they're big enough to be stocked into the lakes. Cannibalism is chiefly responsible for high mortalities among these fish. Millions of forage fish are needed to raise them to suitable lengths for stocking. Research indicates that eight to 10 minnows of the correct size are required daily for each musky fingerling.

Studies conducted in Wisconsin (one of the nation's leading musky states) found that for every 1,000 eight-to 11-inch fish stocked, only 114 live to be one year old. Diseases, parasites, handling, capture, and predation all reduce the fingerling's chances for survival. Stocking large fish, minimal handling, stocking waters that have plenty of vegetation for hiding places, and stocking waters with abundant forage fish populations can enhance musky survival. Because of their high mortality rate, musky populations rarely exceed one or two fish per acre of water.

Growth of Virginia muskies is quite rapid, especially during the first four years: females generally grow faster and larger than males. In Lake Burke, females grow 30 inches long when they are two-and-a-half years old. Males do not attain this length until they are three years old. In Wisconsin, each fish requires five years to reach the 30-inch length limit. Muskellunge have an average life span of eight to 10 years. The maximum age known of any indi-

vidual muskellunge is 26 years.

Casting and trolling are the most popular methods used to catch the species. Large plugs and spoons can be cast to open areas of weed beds, along the weed beds, or stumpy areas. Trolling along these areas can be equally effective. Casting or trolling with live bait is known to be a favorite of many fishermen. Regardless of the method or technique used, the prerequisites for musky fishing are patience and perseverance. Skilled and experienced fishermen report as many as 50 hours of fishing to land one fish. Inexperienced anglers have reported fishing as many as 226 hours to catch one. The average probably lies between 50-150 hours per fish.

There are several good musky haunts in Virginia. The Clinch and New Rivers in southwest Virginia produce numerous fish each year. The James River, especially around Buchanan, is becoming a real "hot spot." For the angler who prefers to fish lakes, Smith Mountain Reservoir, Lake Shenandoah, and Lake Burke all have established populations.

If you're an avid musky fisherman, your fishing reel and tackle box are already geared for fishing these water-wolves. If you're a part of the faction seeking other game fish, the next time you're fishing a lake with musky in it, perhaps you too should put on some heavier test fishing line "just in case." □

Ed Steinkoenig is fish biologist assistant for the Game Commission's fish division. He lives in Fredericksburg.



The musky hunter (above) and his quarry (left).

Spike Knuth

VAGABONDS

of the Plant World

You may unwittingly be involved in the process of seed dispersal for the daisy, the marigold, and other plants: how many times have you found burs attached to your clothes, or worse yet, to you?

by Elizabeth Murray

Each season of the year is characterized by a different major activity in the plant world. Winter, in general, is a time for hibernation and consolidation of food reserves. In spring there is tremendous growth activity in most plants. In the long, light days of summer, there is the greatest food manufacture, and most plants are blooming and reproducing. In fall, in addition to preparations for winter, there is seed production, and dispersal. And if you do not think you are involved in that process of dispersal, just check your trousers after a fall walk through a weedy meadow or along an unmown roadside, especially if the trousers are rough, woolly ones.

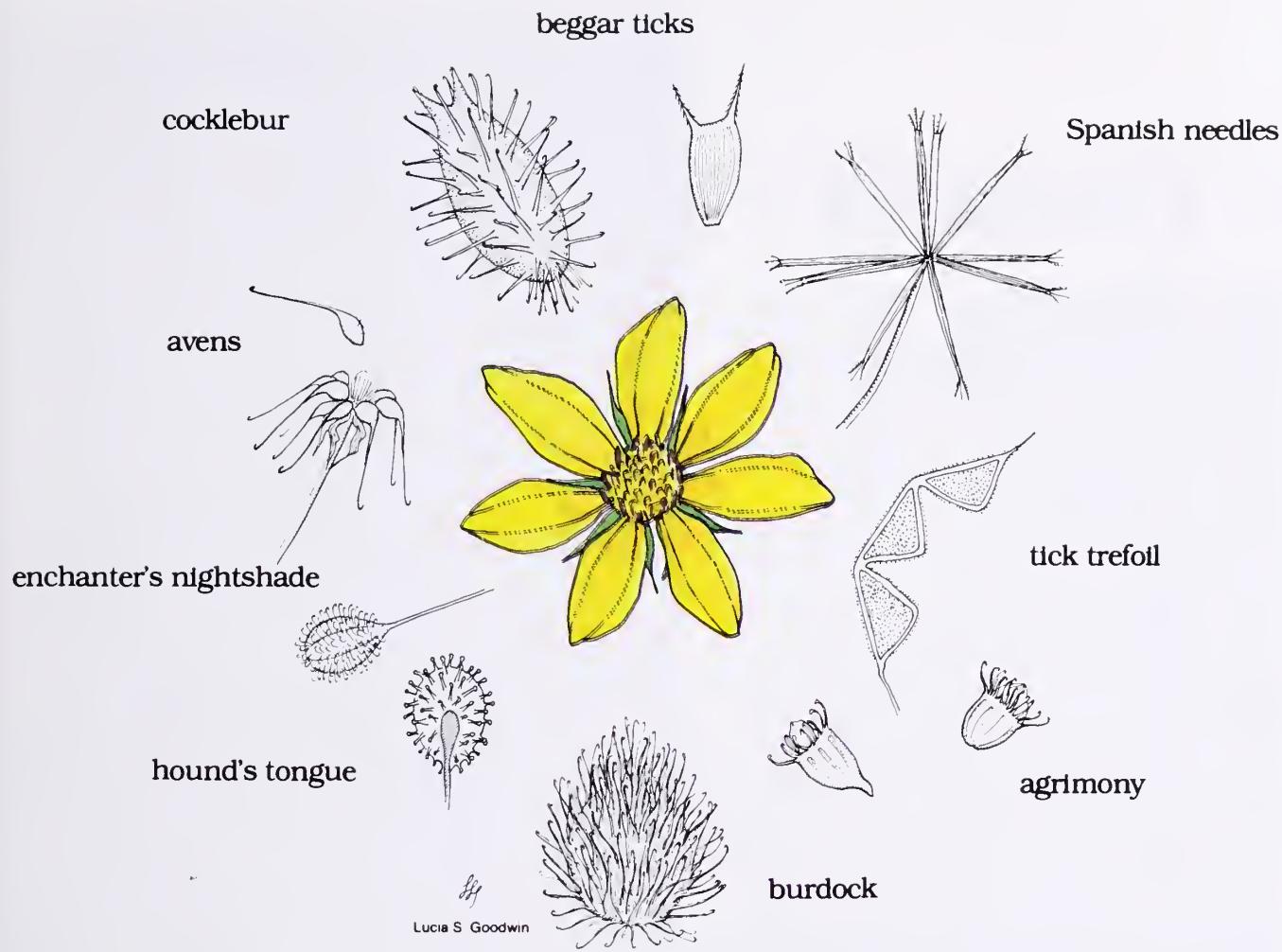
The methods which have evolved for the dispersal of plant seeds can be roughly divided into four categories, wind, water, mechanical devices which are part of the plant itself, and animals, and the trousers come into the last category. Seeds and fruits that have developed hooks, spines or other protrusions which engage the hair of the dispersing animals are known collectively as *burs*.

In the Compositae, or daisy family, the bracts of the involucre surrounding the collective head of flowers often become the bristles of the bur. The burdock, *Arctium*, which has one of the most tenacious burs, has bracts which become stiff and hooked at the tip so that the whole fruiting head can become very firmly attached to any rough surface and even to bare skin. The name *Arctium* comes from the Greek word for bear, suggesting some-

thing rough-coated. The old idea that the plant was helpful in increasing memory powers is a rather original application of the ancient "doctrine of signatures." The doctrine was based on the belief that the ingestion of a plant which physically resembled an organ of the body would be beneficial in treating disorders of the organ. In the case of burdock and memory, there could be no physical resemblance, but the adhesive nature of the burs was supposed to help facts to "stick to the mind." If I subscribed to this view, there would be a dish of *Arctium* on my table every week!

One of the most inventive of all composite genera is *Bidens*, the bur-marigold. There are some 20 species in the eastern United States, each one with a slightly different fruit. Some of them have an oval, flattened bur armed with two principal hooks which are themselves covered with smaller barbs. The well-known Spanish needles, *Bidens bipinnata*, have long, thin fruits with two to four awns at the tip, each one covered with tiny, backward-pointing barbs which will easily hook onto any passer-by.

Perhaps the meanest of all the composite burs is produced by *Xanthium*, the cocklebur. Probably introduced from Europe and widespread in fields and waste places in the eastern U.S., most of our cockleburs grow several feet high and produce burs with stiff-hooked bristles which



really hurt if they stick into your skin. Our border collies will lie down in the middle of a walk to remove the cockleburs from their paws, while other intrusions are left for the general coat-cleaning after returning home. In contrast with burdock, the burs of *Xanthium* are oval and not round, and they are produced in the axils of the branches, whereas burdock fruits appear at the stem tips.

Several members of the rose family produce clinging burs. Agrimony, a tall slender weed with insignificant pale yellow flowers, growing in thickets and open woods, has small, green oval burs armed with several rows of hooked bristles around the middle. Species of avens, belonging to the genus *Geum*, have soft burs with hooked spines that are surprisingly effective "clingers." Unlike burdock where the hooks are part of a rough covering that surrounds the whole fruit, each hook of a *Geum* burs is attached only to one fruit. If one hook is pulled out, it brings with it only this fruit, leaving a hole in the bur which subsequently starts to fall apart.

In the pea family (Leguminosae) there are several fruits which seem to stick rather than hook, but actually do so by means of minute hairs. Tick trefoil, *Desmodium*, is an elusive plant since one finds the attached fruits far more often than one notices the growing plants. Pods are made up of many triangular sections joined together in a line (the generic name comes from the Greek word for a chain, *desmos*); the sections tend to separate and stick individu-

ally. The outside of the pod is covered with tiny hairs whose hooks are too small to be seen by the naked eye. Inside each section is a little bean-shaped seed. The fruits are often called beggars' lice since they are "louse-shaped" and probably cost nothing more than a trouser thread. Sometimes they are known as beggars' ticks although this name is more often given to various other species of *Bidens* which have squatter fruits than those of Spanish needles and finely hooked awns. The name beggars' lice is also applied to the adhesive burs of houndstongue or comfrey (*Cynoglossum*; Boraginaceae) only in this case the "lice" are better fed since the nutlet fruits are much more rounded, bearing stout, hooked bristles. Enchanter's nightshade, *Circaea*, a woodland member of the evening primrose family, produces tiny, tear-drop fruits covered with small, stiff bristles.

It is dangerous to assume that the production of large numbers of seeds necessarily assures the success of a species. This was recognized by Charles Darwin and discussed in the *Naturalist's Voyage Round the World*. He says, "No fallacy is more common with naturalists than that the numbers of an individual species depend on its powers of propagation." A whole cast of inter-related factors is involved, not the least of which is an efficient method for dispersal of seeds to good places to grow. Check those old trousers again and make your own list of the species which you think are doing a competent job. □

Down a Wintry Trail

If you are a hiker looking for a change of scenery, you don't have to look far: try winter hiking

by Carolyn Reeder



Jack Reeder



Neil Means

It's 10° and still dark as we load our day packs into the car. "Don't talk. You'll fog up the windshield," Jack says as he eases the car out of our parking space. We are off on another winter hiking adventure in Shenandoah National Park.

Over the years we've accumulated scores of memories: an ice-bound waterfall...the day that water froze solid in our canteens...walking cross-country over crusted snow

and suddenly sinking in to our hips...

We do not overlook the hazards of winter hiking. Well aware of the need to prepare ourselves to withstand long hours of exposure to cold and wind, we dress in layers and grease our faces with cocoa butter. Just as the Australians speak of two-dog nights, three-dog nights, and four-dog nights (according to the number of dogs one needs to keep warm), we speak of two-long-john days and three-long-



One of the thrills of winter hiking is seeing wildlife, like these whitetailed deer (center). Sometimes, however, a winter hiker (below) doesn't see wildlife, but finds signs of its presence, like these wild turkey tracks (bottom right).



Tom Tucker



Jack Reeder

john days. And we remember that in winter, darkness comes early. As the thin winter sunlight begins to wane, our pace quickens.

Then, too, we always carry along emergency gear: additional layers of warm clothing, extra pairs of socks in case of a mishap crossing a stream, and we take "space blankets," high-energy rations, flashlight, and matches "just in case." I always feel a vague sense of relief when we

return to the car without having needed any of our emergency gear.

We gladly brave the possible dangers and probable discomforts of off-season hiking because of the joys and beauties of the Park in winter. We especially value the solitude and the clarity of the usually hazy air. When else but in mid-winter can you climb Old Rag and not meet

The rewards of a winter hike are many: you may catch a glimpse of a chilly grosbeak perched on an icy branch, or see an old stone wall contrasted against a white blanket of snow, or perhaps you'll find a tree shimmering in the sun after a freezing rain.



Helen Inge



Jack Reeder



Helen Inge

another hiker on the entire circuit? When else but in winter can you see the distant ridges of the Alleghenies to the west?

And unlike other seasons, winter offers a variety of faces: bleak monochromatic days when the forest and mountain peaks seem foreboding if not slightly menacing... days when a dusting of snow lies on remnants of split rail fences and outlines faint traces of old roads that

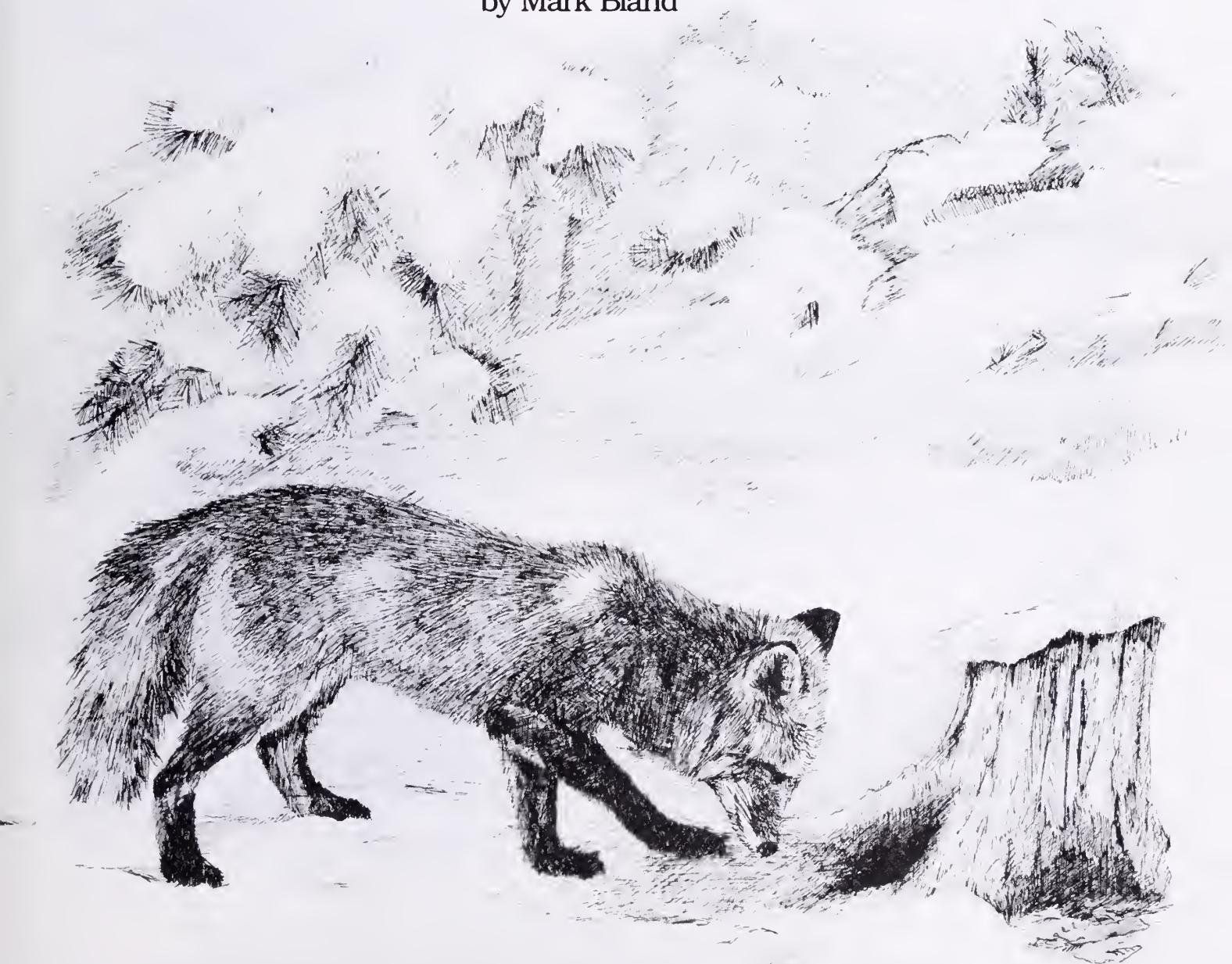
lead to abandoned homesites... brilliantly sunny days when the cloudless sky contrasts with the unbroken snow in the silent woods and hemlocks droop under their glistening burden.

As the days begin to lengthen and the spicebush buds swell, our instinctive joy at the coming of spring is tempered by the realization that there will be no more winter hiking adventures until next year. □

An historic occupation, trapping
continues in popularity in the Tidewater area.

Tidewater Trapping Tales

by Mark Bland



The same trade that shaped the history of North America still lives in Tidewater today. The Hudson Bay Company, the American Fur Company and the Northwest Company no longer lead the nation in gross profits, but their tradition of rugged spirit and competition in fur trading survives and is very much alive in the nature of the trapper today.

Muskrat, fox, raccoon, opossum and nutria are taken by Tidewater trappers each season. Mink, otter, and even beaver are also trapped, but in much smaller numbers. A muskrat that brought top price of \$1.25 in 1965 brought \$9.00 in 1980. A gray fox that was worth \$1.00 in 1950 was worth \$40.00 last year. Four beavers could buy some lonely trapper a gallon of English brandy in 1748. Today, the same number of full-grown beaver will sell for about \$100.00.

Still used for fur coats, hats, gloves, and other attire, these Tidewater animals make winter a challenge and generate profit for those involved in the fur industry.

Muskrat is by far the most trapped fur bearer in Tidewater. This rodent resembles a giant rat (15 inches long, and averaging three pounds), but with thick, light brown-to-black fur, large webbed back feet and a long flat-sided tail, and can be seen swimming in just about every ditch, pond, and waterway in Tidewater. Often it is seen along the side of the road feeding on tall green grass. The sometime pest can also be viewed sitting upright beside the off ramps of the interstate from Virginia Beach to Newport News.

Their dome shaped huts, built from reeds, roots, and cattails, are as high as five feet above water. They usually have several entrances and exits, and always a minimum of one underwater entrance. Generally fastened to well rooted reeds on two or more sides, the huts appear to float above the surface. Perfectly dry on the inside during the worst of storms, strong enough to withstand the elements of nature and the weight of a human, the huts are built near water and food.

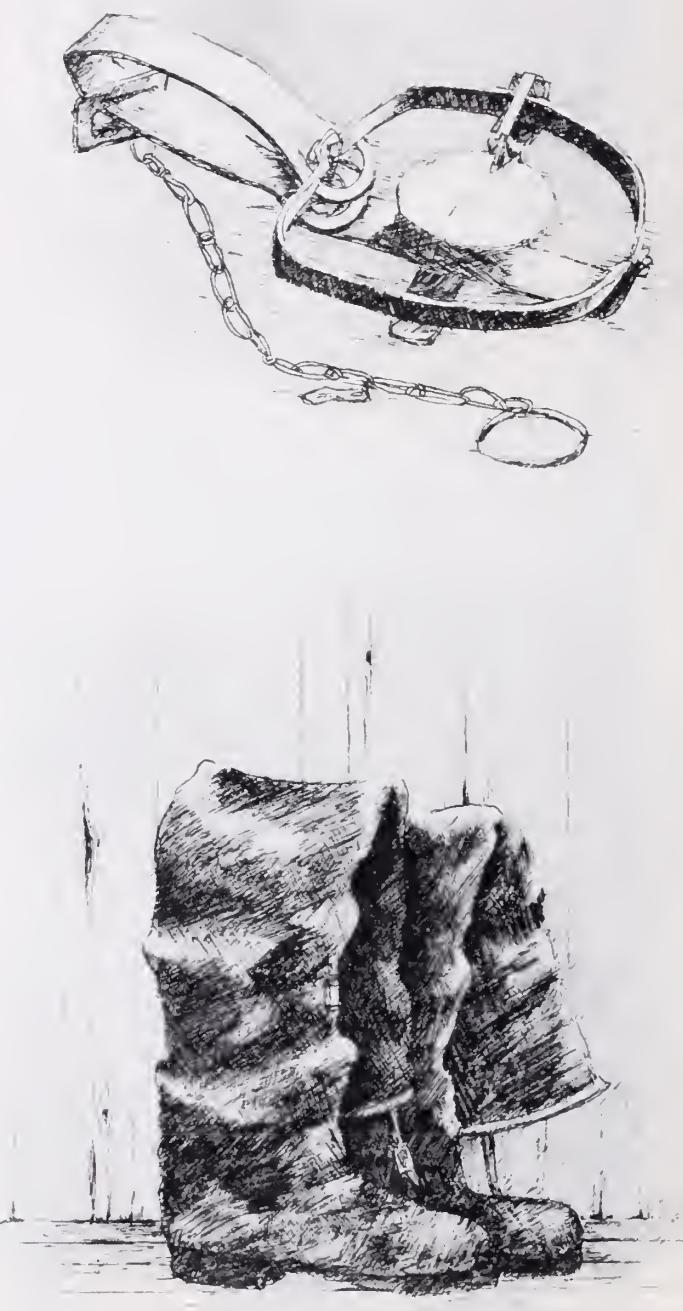
Darrell and Mark, two Tidewater trappers, recall last night's set as they drive to a small private lake in Chesapeake. The early morning is chilly, 34 degrees, but the conditions for muskrat trapping are nearly perfect. Mark stares into the darkness surrounding the headlights of his old Rambler.

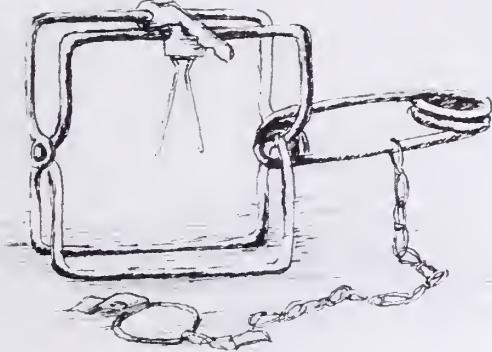
"How many you think we'll get, Darrell?"

Pushing himself upright in the seat, Darrell speaks slowly, but with the certainty that reflects his trapping experience.

"Should be good, everything's right for a good catch, good signs, tide's nice and low. I'd say we should get at least 15 off the lake and 25 from the marsh. Sound about right?"

"Ya, that sounds about right. It'll be 5:30 by the time we get to the lake, you know. That gives us an hour and a half to check the lake. We'll have to hustle."





Stretching in his seat and talking under his worn, large-rimmed leather hat, Darrell continued. "I would like to hit the swamp by seven. That'll leave us an hour before dead low tide to check things out."

The night before, Mark and Darrel set 30 #1½ long springs (foot traps) on the lake in Chesapeake, and 65 Conibears (body traps) in the marshes off the Intracoastal Waterways of Portsmouth. The steel foot traps are effective in catching muskrats from their feeding stations if deep water is within reach. The Conibears are used primarily in the marshes where muskrat runs and holes are visible at low tide.

By following the theory that once a muskrat steps into a foot trap he will instinctively go towards deep water, the lake traps are all staked as far out as possible into the water. When the muskrat hits the covered trap, the weight of the trap quickly drowns him.

Conibears are placed in muskrat runs. The muskrat is killed very quickly as he is caught swimming through the worn open tunnels in the mud. If the muskrat is swimming or walking at low tide to his hole via his run, the trap usually catches him behind the neck and kills him within a few seconds.

Arriving at the lake, the trappers put on their waders halfway inside the car before stepping out in the cold. From the trunk Mark pulled out an old cooler. The cooler would serve as a float to put the muskrats in.

"Got everything?" Darrell questioned, pulling his black rubber gloves over the pair he already wore.

"Ya, come on."

Mark led the way guided by the ray of his large flashlight. The lake became visible just ahead of them. The light showed only a short distance of open water as they stopped near the edge. The rest of the lake contained tall reeds which engulfed the remaining lake for a half mile. The houses and feeding stations of several hundred muskrats were in the reed areas, too dense for a boat to penetrate.

The water was waist-high as Mark and Darrell reached the reeded area which led to the first muskrat house. They knew the lake well, having charted all 32 houses and 58 feeding stations.

"Darrell, look!" Mark whispered, pointing his light to a large muskrat, in the trap. Another muskrat was in the next trap.

After catching 12, it was off to Portsmouth. There, the walking was much more difficult. The sandy-bottom lake was luxury compared to the mud which swallowed the legs up to the thighs with each step in the marsh. No more use for the waders; they were too heavy. A change to hip boots made walking possible, and then only if one knew how to walk in the swamp mud.

Portsmouth provided 32 more muskrats. The trappers had a good catch, 44 muskrats, 14 large blacks, 23 large brown, four medium, and three kittens. The

earnings for the day, \$292.00. Next week it would be off to Newport News for fox and raccoon.

Early the following Saturday morning, Darrell and Mark began their way through the Newport News woodlands ready to set traps for fox and raccoon. It would be quite different from trapping muskrats in the swamps of Portsmouth and Chesapeake. Instead of waders and hip-boots, only kneeboots were required; and instead of just traps to carry, there was now the need for scents, fox urine, bait, a hatchet for making and pounding stakes, and a club. The traps would have to be set in the ground and covered more carefully than those for muskrats. No human scent could be on the traps, the bait, or the boots of the trappers. Rubber gloves and boots were left outside, and bare hands never touched the bait. The greater distance between traps, and the time spent on each set, also limited the number of traps to 20.

The fox presented the most difficulty and challenge in their trapping experience. Never an easy catch, the fox had a way of taking bait and eluding traps. Naturalists believe that evading larger predators for generations, in addition to playing a dual role of hunter and hunted, imprinted many lessons upon the fox and developed its brain to a high degree. The many told stories of their evasive tricks, and Darrell and Mark's experiences, certainly support the naturalist's belief.

One common hunter's story tells of a fox being pursued by a pack of hounds. The fox ran into the path of an approaching freight train. At the last minute, the fox jumped aside; the slower dogs were killed by the train.

Last year, Mark and Darrell lost their bait four times before catching one coy animal. They had dug a hole which slanted into the ground towards a stump, placed a trap at the entrance of the hole, and some chicken at the bottom. Then they covered the bait and trap. The stump was sprayed with fox urine. Ideally, the fox would smell only his presence, or that of another fox, dig for the bait where the hole began its incline, and step into the covered trap. However, the fox was not very cooperative. His tracks were found the next day where he had circled the bait. He had dug a new hole from another angle and enjoyed the chicken. The same day, Mark set a second trap at the entrance of the new hole. Returning the next day, the trappers discovered that the fox had dug a third hole opposite that of the second. The bait was gone.

Positive of a catch the next day, the trappers set a third trap at the fox's new hole. That effort produced nothing. Either the fox did not return that night, or he picked up some human scent and retreated. The traps were left in place, and more chicken put into the hole. On the fourth morning, an eight-pound gray fox awaited the two trappers. He had been caught by the trap in the first hole.

Interestingly enough, the gray fox belongs to a different genus from the red fox, but his intelligence stands true to his breed. In Newport News, the gray fox is caught in

greater quantity, but the red fox is not uncommon.

The raccoon is much easier to catch than the fox, but not easier to hold. Many have pulled out of traps with their powerful legs. Strong traps are required to hold a raccoon.

Finishing their sets, the trappers trudged further into the woods, following the stream which flowed into a larger creek. Having found the main water source, Darrell spotted a stump in an open area.

"A good place for a fox, Mark!" said Darrell, crossing the creek to the stump.

"Ya, looks good."

Darrell dug a small hole for the trap while Mark set the trap. Chicken was placed close to the stump, and urine sprayed on the chicken and across the stump. A small tree made a good anchor for the chain.

The rest of the sets were close to the animal's main water source. The area covered amounted to about five square miles. Enjoying the peace of the early morning and the freshness of the Newport News woodlands, Mark and Darrell finished their sets around noon and headed for home. They looked forward to the next morning with great expectations.

At dawn, on Sunday morning, the trappers' careful sets paid off. Three raccoons, one gray fox, and two opossum were waiting. A good catch and a good profit made their cold feet and planning worth the challenge and adventure.

Darrell and Mark continue their trapping, experiencing the new and old challenges of the trade. Like the mountain men of Jedediah Smith, they and other trappers share that same spirit of adventure and unity with the great wilderness. The Tidewater trappers do not face the perils of Indians and ferocious wild animals as did Jedediah and the early trappers, but the sinking swamp mud, the powers of nature, and the protection of traps and trapping territory are as much a part of trapping as it was in the 1830's.

The woodlands and swamps of Tidewater are turning into shopping centers and apartment complexes, but there remains enough area to keep trapping alive. This is not just important to the trappers, but to the people of Tidewater as well, for the sake of preserving wildlife and maintaining a community which provides healthy outdoor activity.

When one realizes that by starting with one pair of muskrats, the population could hypothetically reach two million over a seven year period, we can also realize the role of the trapper. Damage and disease can result without trappers. Muskrats burrow underground holes up to 50 feet in length. They also cave in banks and land built up for homes. The sometime-pest has even been responsible for putting holes in concrete dams, and often is blamed for the deterioration of golf greens. The fox, raccoon, and mink also present problems for farmers at times.

Trapping is part of Tidewater. It's a Tidewater business and an adventure to many. It's a healthy pastime and offers a means for keeping highly prolific furbearers in balance with their habitat. □

The only career that Ed Hatch has ever been interested in is art. This, coupled with his long-standing interest in birds, has produced the work you see here.

Hatch has been a bird lover since he was a small boy. However, by the time he began college, he felt pressure to paint other subjects and abandoned birds altogether. At Richard Bland Community College, where he earned an associate degree in art, Hatch became particularly inter-

The Watercolors of Ed Hatch

by Sarah Bartenstein

Canada geese and goslings



Hatch paints more than waterfowl: a white-tailed fawn and a turkey feather each have their rest in a bed of leaves. (Opposite page) A brace of black ducks, a hunter's prize.





ested in watercolor. He went through a period of obsession with Andrew Wyeth's realistic style, and credits the nationally-famous artist Charles Sibley with curing him. Sibley would chide him in class, asking the other students, "Who thinks Mr. Hatch has the worst paintings in class? Raise your hands." Finally, Sibley sent Hatch to the library and told him to look at Andrew Wyeth paintings until he "couldn't stand them anymore."

Canada geese



*A*fter this period, Hatch began exploring abstract art, delving into printmaking: lithography, silk screen, and itaglio, in addition to his drawing and watercolor painting. Influenced by a teacher's philosophy—"all art is abstract, because no matter how realistic something looks, it's still an illusion"—he began to see the relationship between abstract art and the more realistic style that he had once used. As you can see from the paintings reproduced here, Hatch's style is quite detailed and realistic now. He says he strives for correct anatomy in his birds and other wildlife, yet he stresses, "each bird is different." He tries to capture this in his paintings: "Geese fly so fast, how could every feather be in place?"

After graduating from Old Dominion University with a bachelor of fine arts degree, Hatch went to work for a screen printing company. His supervisor, Archie Johnson (a photographer whose work sometimes appears in *Virginia Wildlife*), rekindled his interest in birds. When Hatch was selling tee shirts for the company at the Mid-Atlantic Wildfowl Show, he looked at the art being exhibited and thought, "I can do that."

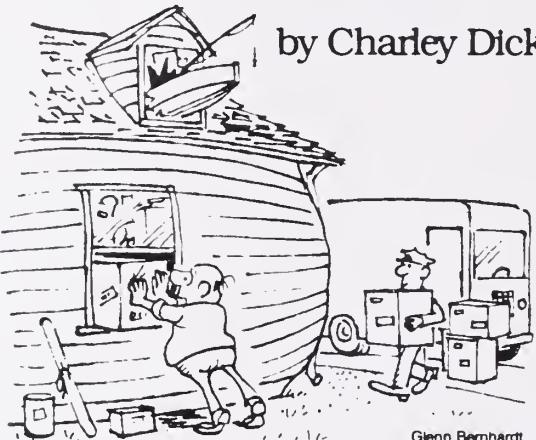
Indeed, he could. When he entered his work in the show the next year (1980), he took Best in Show. His life has been a series of successes ever since, taking numerous awards for his paintings and prints. He is one of a handful of artists selected from a field of some 300 for a professional fellowship from the Virginia Museum of Fine Arts, where his work has been shown in a juried print show and on the Artmobile.

Hatch likes to use dry brush to aid in rendering the fine detail in his paintings. He also likes to combine "tight" areas with "loose" areas: "They complement each other," he says. His designs show restraint—he does not crowd several birds into one painting, preferring to do a detailed rendering of one or two, while taking great care with the background as well. While the meticulously painted birds are done in dry brush, he plays them against flowing, "loose" backgrounds.

You can see the striking results for yourself.

My Kingdom For A Warehouse

by Charley Dickey



Glenn Bernhardt

Gun catalogs, shell boxes, wildlife calendars and even the boxes guns are shipped in become valuable if you save them long enough. There's hardly a hunting or fishing item that some cult of collectors isn't scrambling after and willing to pay far more than the original price.

The only catch is that you must have some place to store things like old powder horns until the price soars. The nearer mint condition your antiques or rare items, the more valuable they become. What the average sportsman needs for storage is something like an abandoned schoolhouse.

I have never enjoyed the luxury of enough space to store such valuables as cartridge brass, old dog collars and leaky johnboats. In fact, while our three children were growing up, the only thing I had room to collect was a guilty conscience. I kept figuring if we ever got them through school and out of the nest, my wife and I would suddenly be rich and have unlimited space in our home.

It didn't work that way at all! The three kids are gone but I don't have any more money than when they were here. Poor dears, they must have been hardship cases during their years with us.

As each young adult left home, I rushed to claim his bedroom as storage for decoys, ice chests and portable blinds. But to my surprise, the kids didn't take anything with them. Every closet, desk, bureau drawer and inch of wall space was filled with some belonging. In fact, two of the kids left their rooms padlocked!

It finally became clear that I had reared a family of ratpackers. The youngsters, of course, promised that their possessions were being left only temporarily and as soon as they settled into baronial palaces they would send for their goods.

It has been more than five years since the last one departed. So far, not one has sent for anything, unless you count money. They have, however, added to their inventory. From time to time, a United Parcel van arrives at our

house with a huge carton from one of the kids marked, "For Storage." The cartons are also marked, "Collect."

Our attic rapidly filled with large boxes. In fact, I have difficulty weaving through the rafters to reach my old wooden cases that shotshells used to be shipped in. I like to check them along to make sure termites are not feeding on them.

Also, I like to check on the stuffed heads that are wrapped in plastic. You know what happens if the wrapper is broken and certain beetles get inside. It was only four years ago that I lost a cape buffalo head to insects. I didn't shoot the buffalo but the head was willed to me by a dear hunting friend. I would have hung the head in the living room but did not feel like going through a divorce.

It is probably possible to walk through our garage without stumbling over cartons sent by the kids for us to hold while they're getting relocated again. I say "probably possible" because no one has ever had the courage to try.

Somehow it doesn't seem logical that three kids could leave home and I would end up with less storage space. I did manage to unload a few small items while my wife was on vacation, such as a motorcycle, jukebox and tuba. That gave me enough space in the boy's room to store a few old guns I had bought at a sheriff's sale. I look on the pieces as valuable assets to leave my children. In the meantime, I'm sure they won't object if I use the guns during the hunting season.

Basically, we are so short of storage space that I keep many of my rods and guns under the beds. I have several map cases nailed to the ceiling in my room. My wife says that ceiling space is just wasted, at least in my room. It's awfully inconvenient! Only recently I wanted to look up an old river course and it took two hours to locate the right map. Besides that, our insurance only covered part of the cost of repairing my broken leg.

We are fortunate that the kids, plus one grandchild, always try to come home for Christmas and New Year's. We ask them not to bring any presents that can't be eaten or that are larger than a matchbox. They always bring new containers for us to store until they get permanently located.

I don't know why my daughters get upset to find a few hunting clothes hanging in their closets. I know some of the old steeltraps might make them uneasy but I always check to see that they are closed. One year I stored a hunting coat and inadvertently left a dead quail in the game bag. This may have prejudiced the younger daughter when she opened the closet door a month later.

When the kids find something of mine in what used to be their rooms, they toss it into my cubbyhole. I'm not sure by which particular squatters' rights they figure they own the rooms in perpetuity. My wife says it has something to do with imminent domain. Like do I want to live here any more.

I'm afraid to leave home during the holiday visits. A lot of my most decorative driftwood might be used in the fireplace. It was only last year that I came home to find the family laughing at one of my old hunting albums. Lord knows what they were about to do with it!

This season the kids got together and pooled their money and wanted to know what I'd like to have as a present. I told them something practical, like a warehouse with a row of bank vaults. Just once I'd like to get all of my hunting and fishing gear lined up where I could find it without having to move dresses, hi-fi sets, sneakers and bluejeans. □

Growing Up Outdoors

by Sarah Bartenstein

The Adaptable Cat

Perhaps you have a cat as a pet. But did you know that house cats, or tame cats, have some wild cousins? Some live in exotic places, but one lives right here in Virginia. Do you know which one? (A hint: it appeared on the cover of the January 1982 issue of *Virginia Wildlife*.)

Cats are mammals. Mammals are vertebrates (animals which have backbones) that have some kind of hair on their bodies, while birds, which are also vertebrates, have feathers. Mammals are also warm-blooded, meaning their body temperature stays about the same regardless of the surrounding temperature, and they bear their young alive rather than by laying eggs which later hatch.

Cats are also carnivores because they eat meat. Wild cats are skillful hunters.

If you guessed that the bobcat is the wild cat which lives in Virginia, you are right. You're not likely to see one, however, since they hunt at night. Mountain lions (or cougars) used to live in Virginia, but none have been seen for so long that experts believe they are no longer present in this area. They do live in other parts of the United States, however.

Although the bobcat is only about twice the size of a house cat, it can kill an animal many times its own size. Bobcats don't limit themselves to mice: like many kinds of wild cats, they also hunt things like rabbits, hares, and squirrels. The bobcat's name comes from its short (six-inch) tail which looks as if it's been "bobbed." Young bobcats are called kittens. The young of other kinds of wild cats are called kittens or cubs.

The cheetah, a wild cat which lives in Africa and the Middle East, is the fastest mammal on land. It can reach up to 70 miles per hour! With that ability, as well as excellent eyesight, you can imagine what a good hunter the cheetah is. Both characteristics make the cheetah well-suited to its environment of open woodlands.

When the serval (SIR-vul) hunts, it uses its keen hearing and its great jumping ability; since it lives in eastern Africa and must hunt in tall grass, its

skills are well-adapted to its environment.

The ocelot (OS-e-lot) lives in the jungles of South America, so it can climb trees to stalk birds or monkeys.

Perhaps the rarest kind of wild cat is the iriomote (eer-ee-uh-MO-tay). It lives in the forest of one small island in Japan. Until 1960, no one even knew that this cat existed.

Although the jungle cat lives in the Middle East and Asia and hunts rats, mice, hares and lizards, the ancient Egyptians used to train this cat to catch birds.

The largest cat in the western hemisphere is the jaguar. It lives in Mexico and Central and South America. Jaguars are alert and are skillful climbers.

Jaguars, along with leopards (known for their spots), lions (known for the adult male's mane), and tigers (known for their stripes), are usually grouped together as the "big cats."

The lynx lives on more different continents than any of the other cats, according to *The National Geographic Book of Mammals*. Since it lives in so many different environments, the color of its fur varies a great deal. The lynx looks something like the bobcat, with

its short tail and tufted ears, but the lynx is larger. It lives in Asia, Canada, and Alaska, and is scattered throughout Europe.

Try this puzzle to see how much you've learned about wild cats. Answers next month.

ACROSS

3. Another name for mountain lion.
4. Wild cat found in Virginia.
6. Looks like a large bobcat; lives on three continents.
9. Large striped cat—one of the "big cats."
11. The fastest mammal on land.
12. Largest cat in western hemisphere.
14. Lives in Africa and Asia; male has a mane.
15. The _____ cat was once trained to catch birds.

DOWN

1. A name for a young cat (such as a lion).
2. Rare cat which lives in Japan.
3. Cats are classified as _____ because they eat meat.
5. Cat which climbs trees to stalk monkeys and birds.
6. One of the four "big cats," this one has spots.
7. Cat with excellent eyesight and jumping ability.
8. A cat is a _____ because it has hair on its body and bears its young alive.
10. The _____ lion lives in various parts of the United States, but is no longer seen in Virginia.
13. Another name for a young cat (such as a bobcat).

Luther Trower



Jungle Cat

Personalities

by Francis N. Satterlee

John E. Moran

First Non-Game Wildlife Fund Donor

John E. Moran of Arlington County became the first donor to the new Non-Game Wildlife Fund when he made a direct contribution to the program in November 1981. Moran learned about the program from an article published in the October issue of *Virginia Wildlife*.

Officials at the Commission of Game and Inland Fisheries were pleasantly surprised by the contribution, since they had not expected much response until "income tax time" drew near.

Last year, the Virginia General Assembly passed a law (effective July 1, 1981) permitting Virginia taxpayers to contribute all or part of any tax refund due them on their 1981 Virginia income taxes. Those who wish to contribute to the non-game fund but who are not due a tax refund may do so by sending a check directly to the Game Commission, as Mr. Moran did. The mailing address is: Non-Game Wildlife Program, P.O. Box 11104, Richmond, Virginia 23230-1104.

Mr. Moran, who is originally from Tulsa, Oklahoma, is an information specialist with the Training Employment Administration of the United States Department of Labor in Washington. He has fished and hunted in Virginia since 1969 when he moved here to work for the labor department.

He first began hunting when his father let him "tag along" as a youngster in Oklahoma. However, since his father's job as an oil drilling contractor kept him extremely busy, the lad really obtained most of his hunting savvy from an Indian friend whom his father engaged to teach him. Since those early days, Moran has hunted whenever the opportunity presented itself. . .and present itself, it has.

Following his graduation from the University of Notre Dame with a degree in journalism, he began serving in a variety of jobs and assignments worldwide. The combination of travel, adventure and a potpourri of experiences culminated in his current assignment at the Department of Labor.

He is the father of three sons and



John Moran and his daughter and hunting partner, Laura, at their home in Arlington County.

two daughters. Moran has taught them all to respect things wild and has practiced a rigid standard of firearms safety in teaching his offspring to hunt. During the past hunting season, he often went afield with his daughter Laura, 17, with whom he has hunted for many years. Shown here with her father, Laura is a full-time flight student with her sights set on a job in commercial aviation.

When John Moran learned about the forthcoming Non-Game Wildlife program from *Virginia Wildlife* magazine, he contributed immediately. Thus he became the initial contributor to this fledgling endeavor which he feels has tremendous potential for the benefit of all wildlife. Having done so, he now urges his fellow sportsmen and all who enjoy the outdoors and wildlife to join him in this fine program. □

Editor's note: The following is excerpted from the recently-published *Undercover Wildlife Agent*, by James H. Phillips. The book is a detailed account of the experiences of U.S. Fish & Wildlife Service agent Robert Halstead. Halstead is the brother of Otto Halstead, a wildlife management area supervisor with the Game Commission, and he is the son of the late Roland Halstead, once a captain in the Commission's law enforcement division.

Two other chapters from *Undercover Wildlife Agent* will be reprinted in future issues of *Virginia Wildlife*. This chapter, "The Early Years," is an introduction to Robert Halstead's initial involvement in game and fish law enforcement. It tells of his beginnings in Virginia, and his father's less-than-ideal introduction to public service.

Undercover Wildlife Agent is available from the publisher, Winchester Press, P.O. Box 21298, Tulsa, OK 74121, in hardback for \$13.95 postpaid.

Virginia Beach was a celebrated, wide-open resort town in the 1920's and 1930's. In spite of Prohibition, nightclubs flourished, and like many towns in resort

areas, Virginia Beach had its share of gambling dens and prostitution. Located in extreme southeastern Virginia, the community was bordered on the east by Back Bay and on the south by Currituck Sound, where great expanses of marsh each autumn attracted legions of wildfowl. Wealthy individuals purchased extensive acreages on these marshes and established duck clubs to provide sleeping and hunting accommodations for the owners and guests. Throughout the autumn and winter, guns boomed across the expanses of marsh as sportsmen sought to bring ducks to bag.

It was into this world that Halstead was born on December 11, 1921. His father, Roland Halstead, was the supervising guide for a posh Back Bay duck club belonging to Ogden Reid, owner of the New York Herald Tribune. The elder Halstead's job was not unusual. Many local residents worked or guided for the clubs. The clubs represented an important source of revenue for many local families. But Roland Halstead was not content to remain forever as the supervising guide at Reid's gun club. He had greater ambitions, and in 1936, he declared his candidacy

The Virginia Game Warden force in those early days. Roland Halstead is seventh from the left in the front row.



Undercover Wildlife Agent

The Early Years

The Depression-era game warden confronted many dangers in his work, but perhaps the largest obstacle he faced every day was the public's negative image of him. Despite the odds, people like Roland Halstead and his sons prevailed.

by James H. Phillips

for sheriff. The declaration proved a turning point for the elder Halstead and his family.

Of all the local races, the interest focused chiefly on the office of sheriff. The race featured the elder Halstead, the incumbent, and a third candidate. The chief campaign topic was gambling and the illegal pay-offs to police and politicians who chose to ignore the wide-open games of chance. There was considerable sympathy for cleaning up the town. Many residents loathed the illegal activity. They wanted it stopped. But when the votes were counted, the incumbent was declared the winner over Halstead by a narrow margin. The loss was a disappointment to the elder Halstead. He tried to mask his disappointment, remaining outwardly cheerful. But the rejection by the voters left him dejected.

And then a curious event happened. Several days after the results were announced, the sheriff was found dead in his horse stable. In the stable were boxes filled with uncounted ballots. Roland Halstead demanded a recount. After the recount, county officials summoned the elder

Halstead to the courthouse. He thought he was to be named sheriff, to be declared the election winner. The Halstead family teemed with excitement. They could not conceal their glee, and anxiously awaited his return. But when Halstead came home from the courthouse, he was not the sheriff. He was a Virginia game warden.

Many years later, Roland Halstead explained to his son why he refused to accept the sheriff's post. "I was told I would have to accept bribes." As a sop, they named him a game warden, a job which immediately earned him the scorn of many fellow guides and local hunters.

The post of game warden is a curious one in America's history. To early immigrants, wild game often provided the sustenance of life. They believed it their right to harvest nature's bounty.

They also believed that wildlife should belong to everyone. Most of the immigrants were landless when they embarked for the New World. In England, the landowner owned the game and many of the impoverished immigrants had poached on the farms of the landed gentry to



feed their families. The English gentry hired gamekeepers to arrest the peasants who trespassed on their estates and poached their game. To the poor, poaching was an honorable act; there was no criminal stigma attached.

One of the first acts the colonists did on arriving in this country was to declare the game the property of the state—not the landowner. Thus, a poacher who killed illegally was only stealing from the government—not the landowner. And government was not well liked; few cared a whit about the government's loss. Moreover, there was an abundance of wildlife. Few feared for the survival of a species or regional population of animals or birds. Game was plentiful.

When the elder Halstead was appointed to his post, the nation was in the throes of a depression. For many residents of Back Bay, the marshes provided a means of feeding their families. They baited ducks to make them easier to kill, they shot in excess of the legal limit, they often sold ducks to earn money. They believed this was their right, and harbored intense resentment against persons who thought otherwise. The game warden, like the game-

keeper in England, was the natural enemy.

Moreover, a few years prior to Halstead's appointment, a shoot-out between three poachers and several game wardens on Back Bay resulted in two poachers being killed and the third wounded. The fact that two of the poachers were relatives of the senior Halstead did not affect local opinion. Many individuals, friends and relatives alike, stopped speaking to Halstead when news of his appointment was announced.

The senior Halstead sought to blunt his ostracism by beginning an all-out public relations campaign. He arrested few persons initially; he talked with hunters and guides; he braved howling blizzards at considerable danger to himself to rescue stranded hunters. He sought to win their respect—if not their favor—before cracking down.

For young Halstead and his brothers, their father's ventures caused considerable grief. Classmates in school taunted Halstead, often picking fights with him. The game warden was the enemy, and the elder Halstead's son's



(Preceding page) Stuart Purks, a game warden who was later to become assistant chief of law enforcement, with two wildlife agents after confiscating illegally-taken pelts and fish. (Left) A waterfowl hunter; (above) two wardens at Back Bay circa 1949 map their patrol route.

knew it.

Halstead, however, was proud of his father. He frequently accompanied the elder Halstead on his rounds through the marsh. He learned to love the iodine smell of the marsh, to hear the wind moaning though the banks of reeds. After his discharge from the navy in 1946, he announced to his father that he, too, wanted to be a game warden.

His father objected. "I don't want you to suffer what I have had to endure," he said. "I don't want you to be exposed to the corruption of politics. Go into business."

But Halstead refused to heed his father's advice and Roland Halstead finally relented. With the help of his father's political connections, Halstead was named a Virginia game warden in 1947. Less than two years later he was hired as a U.S. game management agent by the Bureau of Sport Fisheries and Wildlife, the predecessor of the U.S. Fish and Wildlife Service.

Halstead's decision to become a game warden was a natural one. He had learned the art of tracking outlaw

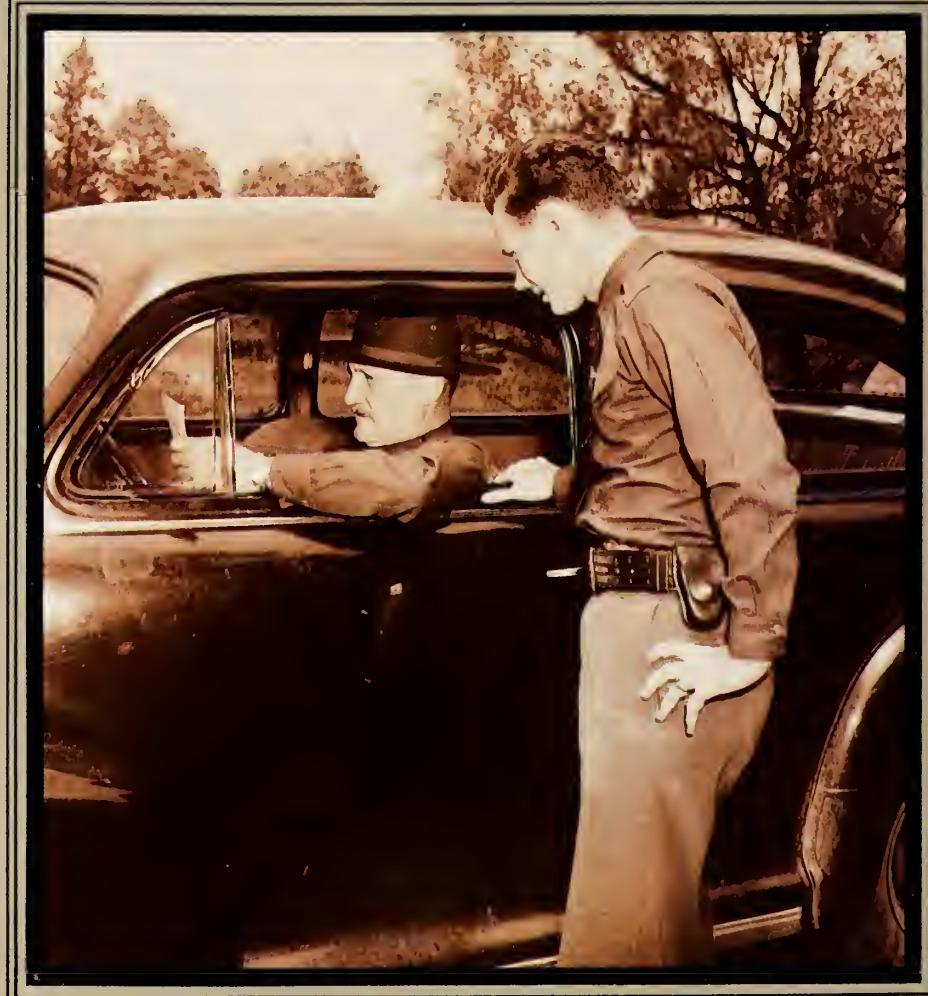
hunters at his father's side. It marked the beginning of an extraordinary career for Halstead, a career that would take him across North America in pursuit of men and women who plundered the nation's fish and wildlife. It would bring him into close contact with some of the best game wardens in the business—men like Chuck Lawrence, Rex Tice, William Davis, Dave Kirkland, Larry Thurman, Russ Gallo, John Wendler, George Ross, and Albert Sumrell.

Halstead often would find himself in great personal danger. He would see his investigations come to nothing because of political pressures exerted on behalf of suspected lawbreakers. Over the years, he would come to know the country intimately, and he would learn some bitter truths; that no species is safe from outlaw hunters, that national parks are not necessarily safe havens for wildlife, and that the killing of endangered species for profit or "sport" is widespread. □

Next: "The Duck Trappers"



(Above) Roland Halstead. Robert Halstead (right) in his first year as a Virginia game warden.



Outdoor Notebook

Edited by Mel White

Rabbits, Tularemia, and You

Jack Gwynn,
Supervising Game Biologist
Game Division

"Remember, let's be careful out there." This daily advice from the sergeant in TV's "Hill Street Blues" is also good advice for Virginia's hunters and trappers.

Game Warden Stuart Doggett has reported two recent cases of hunter-contracted tularemia. Two brothers were hunting rabbits in the northern Shenandoah Valley, a few miles south of New Market. According to the State Health Department's Bureau of Epidemiology, three cases of tularemia have been reported up to November 7, 1981. Only one case was reported in 1980 but in 1970, 13 of Virginia's 16 reported cases were directly associated with dressing rabbits. In the United States, the human mortality rate from the disease is extremely low, near one percent.

Tularemia is an infectious plague-like disease distributed throughout the world. This disease has been reported in man and more than 80 other species of mammals, most of which are rodents and lagomorphs (rabbits). In wildlife of the United States, the disease occurs in aquatic fur animals but mainly in cottontail rabbits, hence its common name, "rabbit fever." The disease is so well entrenched in our native wildlife that there is no possibility of eradication.

In man, 87 percent of all cases of tularemia are characterized by the formation of one or more small, inflamed, swollen areas at the site where the infection enters the body, generally on the hands, arms, face or neck. This swollen area quickly fills with pus and then develops into an ulcer. In eight percent of the cases in man, there is no swollen area but a high temperature, and superficially, the symptoms resemble influenza.

Tularemia may be transmitted from animal to animal, and from animal to man, in several different ways:

- a. drinking water contaminated by animals infected with tularemia
- b. eating insufficiently cooked meat from infected animals
- c. biting arthropods, such as blood-

sucking flies, ticks, lice and fleas
d. direct contact with infected animals (this is the main source of infection to man)

Usually the organism enters the body by way of cuts and scratches on the skin, although in some instances, it apparently penetrates the unbroken skin.

In geographic locations where the disease is present or has occurred in the past, protective clothing should be worn and any ticks attaching to the body should be promptly removed. When skinning animals or handling fresh skins from an area in which tularemia is suspected:

- a. wear rubber gloves
- b. use soap and water liberally on hands and arms, and follow with a disinfectant
- c. use a strong disinfectant solution to clean up and disinfect all instruments and working space

Tularemia will be destroyed by thoroughly cooking wild birds and mammals to be eaten. In areas where tularemia is known to occur, it is a good idea to disinfect drinking water which may have been contaminated by aquatic furbearers.

"Remember, let's be careful out there."



It's Not Too Late

If you, like many of us, are still waiting to fill out your Virginia income tax form, don't forget your friends in the woods and waters when you do. Use Line 20 on the 1981 tax form and join the thousands of Virginians who are doing their part to protect your non-game wildlife.

Virginia's new non-game wildlife program needs your help to get started. There's plenty of work to be done to assure the future of the state's wildlife—and now you can be a part of that

great effort. Check your tax instructions; they tell you how to use Line 20 to give wildlife a portion of your tax refund.

You don't have to have a tax refund to help. You can contribute by simply sending your check to: Non-game Wildlife Fund, Box 11104, Richmond, Virginia 23230-1104.

Do it now! Wildlife can't wait.

Something Old in the New

The New River, an ancient stream itself, apparently harbors a few fish who also have grown old—and large! Tim McCoy, who lives near Blacksburg, found that out last November while fishing the river near Radford Arsenal. Tugging on Tim's line was a muskie that weighed in at 39 pounds, 12 ounces.

The Game Commission sent fisheries biologist David Whitehurst from Roanoke to look at the muskie, and David confirmed that it was indeed a new record for muskellunge in Virginia.

McCoy, who takes the entire month of November off to fish for muskies, hooked his lunker while trolling a "Believer" lure. When the fish hit, McCoy said it felt like a log or a big catfish. The big fish came in easily until it saw the boat. It then turned tail and took off on a sizzling 50-yard run.

Although the lunker never jumped, it staged several determined runs before McCoy boated it. The lunker measured 51½ inches long.

The muskie is the largest member of the pike family and was introduced into Virginia waters several years ago to provide a new sport fish for this area. The muskie is considered one of the fastest growing of the freshwater fishes. Compared to a largemouth bass, a muskie can be twice as long. By age seven, a muskie (records from Wisconsin) is usually over a yard long.

Although the muskie Tim McCoy caught is a new Virginia record at 39 pounds, 12 ounces, it is a long way from the world record which is now over 70 pounds.

Where does the name "muskellunge" come from? The Ojibways who named it were only trying to be descriptive. In the Ojibway dialect, the name translates to "ugly fish."

Nature and Science Center Sponsors Art Show

The first annual Hampton Roads Waterfowl and Wildlife Festival will be held March 13-14 in Newport News. The Festival will showcase some 40 prominent artists and craftsmen from the eastern United States whose works depict wildlife and waterfowl exclusively.

The event is sponsored by the Peninsula Nature and Science Center, a non-profit museum dedicated to the preservation of wildlife and the education of the public in the field of the natural sciences. The Festival has been planned to coincide with National Wildlife Week.

A highlight of the event will be an auction of works donated by the exhibiting artists. The auction will be held at 7:00 p.m. on Saturday, March 13. Net proceeds from the Festival will go to benefit the Nature and Science Center in support of its exhibits, programs and activities.

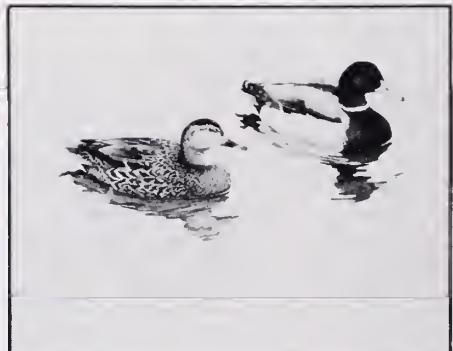
Four of the 40 artists who will be exhibiting are Durant Ball, Ronald Godby, Johanna Obeck and William Redd Taylor. Mr. Ball is well known for his watercolors of wildlife. Dr. Godby, a Newport News dentist, has recently done a one-man show at the Nature and Science Center. Much of his work depicts animals in natural settings from the Science Center's wild animal rehabilitation program. Mrs. Obeck, who has been painting for 14 years, was voted the Richmond Chapter of Ducks Unlimited Artist of the Year for 1980. Mr. Taylor, who has gained wide recognition for his distinctive watercolors, created the pen and ink design of a pair of wood ducks for the logo of this Festival.

Robert P. Sullivan, Executive Director of the Center, said, "We are interested in bringing together artists and craftsmen for a quality show which will appeal both to collectors and the general public." During the show, several artists will be demonstrating their techniques.

The Festival, to be held at the Hellenic Community Center, 60 Traverse Road in Newport News, will be open to the public from 11:00 a.m. to 9:00 p.m.



The first annual Hampton Roads Waterfowl and Wildlife Festival will feature the photos of Ron Godby, and the paintings of Durant Ball (upper right) and Johanna Obeck (lower right).



Saturday and from noon until 5:00 p.m. Sunday. The charge at the door will be \$2.00 for those 13 years old to adult

and \$1.25 for children 6-12. To reach the Hellenic Center, take I-64 to the Route 17 North exit and turn left on Traverse Road.

Richmond's Tenth Annual Wildfowl Show

This month, Richmond's Northside Lions Club is sponsoring the Tenth Annual Wildfowl Carving and Art show. Held at the state fairgrounds, the show will be held on February 13 and 14. Hours are from 11 A.M. to 9 P.M. on Saturday the 13th and 10 A.M. to 5 P.M. on Sunday the 14th. Admission for those over 12 will be \$2.00.

Since the show began in 1973, artists and the public from throughout the eastern seaboard have traveled to Richmond to exhibit and view some of the nation's finest examples of wildfowl art and carving.

The annual Great James River Decoy Contest, a carving competition, has been held since 1977. The competition includes judging of miniature and life-size wildfowl, shorebirds and birds of prey.

Another feature of the show is a decoy painting contest. Primed duck decoy blanks are issued to 20 selected exhibitors on Saturday. At noon on Sunday, the completed decoys are collected and judged. After judging, ribbons are awarded and the decoys are placed on display until 2:00 when all the decoys, along with their ribbons, are auctioned to the highest bidder. All proceeds go to charity. Each decoy is

autographed by the participating artist, affording the opportunity for an art lover to acquire a valuable, award-winning decoy at a fraction of the customary cost for a comparable work.

All profits from this annual wildfowl show go to the various charities of the Richmond Northside Lions Club.

Lynchburg's Urban Wilderness

by Charles D. Carter

Have you ever stood beside a gently flowing stream and gazed in awe at a towering sycamore? Or walked a forest trail boarded by colorful wildflowers? Or listened to the song of a warbler in the top of a tulip poplar? Even if you have done these things, chances are that, when you did, you were not in the middle of a city. In the city of Lynchburg, however, there is an area where all these activities are possible.

The Blackwater Creek Natural Area is a virtually undisturbed, forested creek bottom traversing the city. The steepness of the land adjacent to the creek caused this area to be almost completely overlooked by developers. The city of Lynchburg now owns the majority of the area and is currently developing it for passive recreation.

At this writing, the Natural Area has approximately four miles of bike-

path and over five miles of hiking trails, lending peace, solitude and relaxation to the visitor.

The bike path follows an old city street for some distance and then follows an old railroad bed to its end. The bike path passes through open areas bathed in sunlight and into deeply shaded areas which afford the cyclist a view of plant succession as well as a climax forest.

There are two hiking trails within the Natural Area. The longest trail is the main creek trail, four miles long with another six miles in the developmental stages. This trail meanders beside the Blackwater Creek and passes through forested areas characteristic of both piedmont and mountain regions.

The second trail is a one-mile interpretive trail. This trail crosses the Blackwater Creek twice via two rustic foot bridges. The trail then runs up the slope away from the creek. Along this trail the visitor can observe examples of forest succession and again the climax forest that has been so well preserved in the Natural Area.

The colorful wild flowers of spring, the lush green foliage of summer, the blazing colors of autumn and the quiet of winter all combine to make the Blackwater Creek Natural Area a joy to behold. The people of Lynchburg can be proud that their city is working to maintain such an area for their use and for generations to come.

Enjoy big savings: subscribe to *Virginia Wildlife*!

The per-copy price of *Virginia Wildlife* is \$1.00, but when you buy it "by the dozen," you save \$7.00 a year! And if you buy the three-year subscription, you can save \$23.50—that's a 65% savings! Think of the convenience of having this beautiful color magazine delivered to your door every month. You can't afford not to subscribe to *Virginia Wildlife*! Mail to *Virginia Wildlife*, P.O. Box 11104, Richmond, Virginia 23230-1104, or give it to your game warden.

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It Appears to Me

by Curly

... A PERSON OUGHT TO HAVE ONE

There is a town in Wisconsin which a certain producer of a malt-flavored beverage claims to have made famous. Without mentioning the producer nor the beverage, both of which will probably pop into your mind anyhow, let me say that Milwaukee, Wisconsin is famous for other reasons as well. One is a recently completed study of Milwaukee's garbage. The project, entitled "Le Projet du Garbage," was undertaken by no less than the departments of anthropology of the University of Arizona at Tucson and the University of Wisconsin at Milwaukee.

Sparked by obviously prevalent misconceptions regarding the generation and disposal of solid waste, the study reverses what had been popular beliefs about who produces residential waste and in what quantities. An example of these revelations was the fact that lower-income households throw away more than the well-to-do.

Another example brought out by the study was that contrary to estimates by the government, which stated that household (paper) solid waste was particularly high, 0.76 pounds per person per day, the Milwaukee study found that only about 0.51 pounds per person per day was more realistic.

Copies of the brochure which summarizes the results of the study are free. Write to: The Solid Waste Council of the Paper Industry, 1619 Massachusetts Ave. N.W. Washington, D.C. 20036, requesting "Who Throws What Away." Persons interested in a copy of the complete study may purchase one for \$25.00 from the same address.

No doubt the most travel that we undertake in the winter is at Thanksgiving and Christmas. However, the first few months of winter, like this month of February, are also favorite times for folks to "wander off." With that in mind, I want to call your attention to a service that is currently being provided by your friendly National Weather Service. Those good folks are making available a two-day forecast for major United States cities from anywhere in the nation 24 hours a day. Now, most things we talk about in this column are free. This service I have just mentioned isn't but almost! The cost is only 50 cents for a direct-dial



telephone call to one of two "900" prefix telephone numbers.

The service is working now on an experimental basis and will be in operation throughout this month. The primary reason for the test is to determine if the public demand for traveler's weather will support a telephone toll system maintained by the American Telephone and Telegraph Company. It will also serve to evaluate an additional outlet for public travelers weather. The way I look at it, the only way a body could lose on this deal is not to try it and for half-a-buck, ya'll can't miss. If you plan to travel in the area east of the Mississippi, dial 900-EAST. This will give you information about the precipitation and temperature forecasts for Atlanta, Boston, Chicago, Cincinnati, Detroit, Little Rock, Miami Beach, New Orleans, New York and Washington. For the same sort of information "out yonder," dial 900-WEST for Bismarck, (North Dakota), Dallas, Denver, Great Falls, (Montana), Kansas City, Las Vegas, Los Angeles, Phoenix, Salt Lake City, San Francisco and Seattle. The forecasts are up-dated about every 12 hours by the National Weather Service meteorologists in Kansas City.

Speaking of weather did you know that the average temperature for Roanoke, Virginia forty years ago this month was 34.2°F. The average for Richmond that same month in 1942 was 35.2°... just thought you ought to know. Just to make you feel a little warmer, compare those temperatures with the record set in Parshall, North Dakota on February 15, 1936... minus 60 degrees below zero. It still stands as the state's coldest day.

... FOR YOU BOOKSHELF

Let's see now, spring gobbler season in the Old Dominion begins April 17 and closes May 15. With that in mind, you turkey hunters might just be interested in a new 102-pager entitled "Long Beards, Long Spurs and Fanned Tails." This publication, authored by Bob Clark up in our neighboring state of Pennsylvania, is certain to provide some excellent reference and study material for novices and old timers alike. The price is \$4.95 including postage; order from Bob Clark, 102 Beechwood Drive Mechanicsburg, Pennsylvania 17055.

Since we live here in the Commonwealth we can very easily become sort of blasé about the wonderful sights, scenes and sensations that are all around us. Not that we underestimate these sources of beauty, it's just that unfortunately we are apt to take them for granted. With that in mind, I am reminded of the old adage "too close to the forest to see the trees." Or to put it another way, "sometimes seeing something through another's eyes opens ours." That happened to me recently and I refer to a publication out of Louisiana entitled "The Pelican Guide to Virginia." Written by Shirley Morris, this 128-page, illustrated publication contains information, maps, special events calendar and descriptions of nearly 300 attractions in Virginia. These range from the breathtaking scenery, public buildings, and spectacular caverns to historic homes and delightful country inns.

Although the author is a resident of Newport News, she writes about her native state as though it has just been discovered... delightfully! "The Pelican Guide to Virginia" is available for \$4.95 plus postage from Pelican Publishing Company, 1101 Monroe Street, Gretna, Louisiana 70053.

... AND THEN

Now and again we hear from our readers, both far and near, about a variety of subjects. One of the most faithful is my long-time friend M.L. from the place where (as the saying goes) I raised-up... Minneapolis. The latest communication contains a bit of philosophy which I want to pass along as a day-brightener. . ."Nothing is ever always wrong. Even a stopped clock is right twice a day." □

Editor's note: This is the first edition of a new monthly feature on law enforcement activities, safety afield and afloat, and other related topics.

Game Warden "Outfoxes" Violator

by Lt. Herb Foster
Education Supervisor
Law Enforcement Division

One of the most important aspects of a game warden's job is investigation: as a law enforcement officer, a warden must prepare his case just as any other law enforcement officer does.

Game law violations take on many forms; one is the capture and confinement of wild animals. People do this for a wide variety of reasons, most of which stem from concern for the animals, or from curiosity. Still, there are people who confine and exploit animals for their own gain.

There are a few ways that people may legally confine wild animals in Virginia, but the law requires that such people obtain a permit from the Commission of Game and Inland Fisheries first. One of the prerequisites for being awarded this permit is an inspection of the holding facilities by a Virginia game warden to make sure that certain health and humane standards are met.

Game Warden Richard Perry had received a request to conduct an inspection of fox pens and discovered three grey foxes in captivity. A man had unlawfully penned the animals before receiving the required permit: although he had applied for it, he had jumped the gun and penned the animals before a permit was granted. His purpose was to collect and sell the fox urine to trappers to use as a lure.

The man was ordered to release the animals and Perry told him that it would be illegal to hold any more animals unless he first obtained the required permit. After consulting with his supervisors and learning that the request for the permit would be denied, Perry did a follow-up investigation.

He found that not only were the foxes gone, so was the pen. Perry wondered how and why the pen had been removed. It was heavy and well-con-



Perry and Foster about to free one of the foxes.

structed. The materials were certainly expensive and the whole contraption could not have easily been moved. He decided to investigate further.

Perry wanted to find out if the foxes were still in captivity, and if so, where they were being held and by whom. He believed that the original captor would be too sly to keep the greys himself, so he concentrated on the man's associates.

Perry regularly watched the original site, looking for any vehicles which could be seen there regularly. He took the license numbers of several such vehicles. He was able to obtain vital information from the corresponding registrations from the Division of Motor Vehicles. He started driving by the addresses listed on those registrations to look for the pen and foxes. Finally, it all paid off: after several hours of diligent investigation, he sighted the pen and grey foxes in a back yard.

At this point, Perry made arrangements to meet the person who now had the foxes. Then he called for assistance

from a Henrico County animal control officer, and from me. When Perry and I arrived at the yard where the pen was, two of the foxes had already been placed in burlap sacks and were calm. The one fox remaining in the pen was a rather ornery female. Whenever we approached the pen, she snapped and growled through the wire. We used a noose to remove her and placed her in the back of the truck.

We then charged the individual with holding the foxes without a permit. After we finished our arrest procedures, we left with the foxes and took them to an area Perry had already selected. Watching those three foxes fly away from us, headed south under full sail, was enough reward for all the hard work and sometimes tedious investigation.

And Perry's careful work paid off a second time, as well: a Henrico County General District Court convicted the captor, fining him \$100 and court costs, the maximum penalty allowed by law. □



Bird of the Month

by Carl "Spike" Knuth

Whistling Wings: The Goldeneye

Winter on Coastal and in Tidewater Virginia can be devastating to flesh and bone of late-season waterfowlers. But while the duck hunter suffers, his quarry doesn't seem to be bothered by the weather. Waterfowl seem unconcerned about wind and cold water—most notably the sea ducks. However, among the hardiest of waterfowl is a duck that prefers fresh water. The American or common goldeneye usually doesn't leave the North until all water has turned hard. Waterfowlers that hunt the latter days of the season throughout all flyways find that the goldeneye is among the last ducks to visit the South in winter and usually among the first to go North in spring.

The goldeneye is a medium-sized, stocky-looking duck. The male has a velvety, blackish-green head with a round white spot at the base of its bill. From a distance, its head looks all black. Its back is black with a white body and white speculum patches on black wings. Its feet are bright yellow-orange. The hen has brownish-gray upper parts, chest and flanks, with a white collar—Incomplete in back. Her head is a rich brown and she has a yellow-tipped bill. Both sexes have a puffy-headed, crested appearance.

The goldeneye is a fast, powerful flier with quick beating wings producing a whistling sound which gives rise to its nickname of "whistle wings." In a quiet, Chesapeake Bay fog, a small flock from a distance produces a sound that resembles a jingling noise—thus the name "jingler," used by Northern Neck hunters. Its white flashing speculums, white body, black wings, back and head are distinctive in flight. Its cousin, the bufflehead, is like a goldeneye in miniature, although head markings and overall coloration of the hens is different. Goldeneyes normally fly in small groups—seldom more than six or eight in a flock. On migration they fly in larger (though still relatively small) flocks, usually very high.

Their spring migration begins as early as February in Virginia. They follow open water north as warming spring temperatures "unzip" ice-locked freshwater lakes and rivers. Actually, many of them never come any farther south than they have to. The Great Lakes Region hosts numerous wintering goldeneyes. Goldeneyes begin courting and pairing off even before reaching their breeding grounds. I recall one calm, damp, foggy March day on the southern shore of Wisconsin's Lake Winnebago, when a group of about ten males courted a pair of hens. They swam about restlessly with their crest and cheek feathers literally standing on end, which made their heads look even larger than normal. Then one drake stretched its head straight out over the water and began "sneaking" up to the female. He then stretched his head up and jerked it back violently against his rump. It looked like he was in danger of disjoining his whole body. He returned his head forward and as he did so, he jumped forward with a kick and a splash. For a long time the hens simply ignored all the commotion and gyrations. Suddenly one of them laid its head outstretched on the water and lay very still, showing either subjection or her acceptance. Minutes later, the hen and one of the drakes swam over to join other mated pairs resting and feeding.

By mid-April, goldeneyes are arriving in good numbers to their breeding grounds in Canada, which extend from Newfoundland to the Bering Sea in Alaska. Female goldeneyes seek nesting sites in rotted, hollow trees with a preference for being near or over water. The nest might be anywhere from five to 60 feet above the ground. Eight to 12 eggs are laid and after about 20 days, they hatch. When they are about two days old, the downy balls of fluff jump from the nest cavity at the urging of the hen below. They jump and bounce like balls of cotton and miraculously are not injured. The hen quickly leads them to the safety of the nearest water.

The young feed mainly on small insects and aquatic plants. In adulthood, 70 percent of their diet will consist of animal matter—mainly crustaceans. Goldeneyes are excellent swimmers and divers—diving with ease when feeding. They are aggressive

bottom feeders, even turning stones over to get at small shellfish.

Goldeneyes begin leaving their breeding grounds in late October, riding cold Arctic fronts south in mid-November to the Midwest and Great Lakes, then further south by mid-December. Waterfowlers find goldeneyes wary ducks that seldom decoy more than one time around. However, its habit of flying parallel to shoreline contours may give the impression that it is not cautious and occasionally gives shorebound gunners some relatively easy opportunities. Also, goldeneyes have a habit of circling after take off as if to help it gain altitude which often brings it in range.

Though cautious, goldeneyes can be decoyed. One fall I painted four old wooden bluebill decoys to resemble three goldeneyes and a bufflehead. I found that late in the year, when goldeneyes were more prevalent, the goldeneye decoys were very effective by setting them apart from the other decoys. Passing goldeneyes frequently ignored bluebill, redhead and canvasback decoys and plopped down with their lookalikes. One of the goldeneye's most aggravating habits is to overshoot the decoys, alighting just out of range. Worse, if they stay there, they seem to draw other ducks to them, causing passing birds to bypass the decoys. Goldeneyes are also capable of diving directly into the water from flight. Many duck hunters have witnessed the dive of an injured bird as it plunges underwater—then swims off about 75 yards before surfacing—to elude capture.

Goldeneyes are not a gourmet's delight. Due undoubtedly to its shellfish diet, their flesh is strong and "fishy" tasting. Much of this flavor, I feel, is imparted by the fat. Skin the birds, remove the fat and soak in your favorite marinade to make them more palatable.

Some of its many nicknames are: whistler and merry wing, for its wing noises; bright eye or brassy eye, for its eye colors; oyster duck, for its feeding habits; iron head or bull head, for its toughness to bring down (or its imagined stupidity); plongeur, French for diver; and winter duck, for its tolerance of cold weather. □

Virginia's weather is constantly changing:
boats trapped and idle today
can see angling action tomorrow
when the sun frees them from their icy bonds.

